

WELL SUMMARY

page 1 of 3Location ID: BLM-5-527 Field Representative(s): CooperNorthing: 232891.85 Easting: 403363.61Date Started: 3/4/88 Date Completed: 4/4/88Drilling Method: Air-foam rotary Drilling Contractor: LarjonDriller: J. GowerTotal Depth Borehole: 560' Total Depth Well Casing: 543'Total Depth Surface Casing: 100'Diameter Well Casing: 4" Diameter Surface Casing: 10"Length of Bottom Blank: 5'Type of Screen: extra strength 0.02 slotScreen Interval: 527.3' to 537.7'Water First Detected: 528'-560' Water Level Open Borehole: 476.8'Water Level Cased Borehole: 476.7'

Quik-Foam Use: 11 gallons

Estimated Water Use: - 11570 gallons introduced while drilling & coring
- 4200 gallons pumped from mudpit
- 1000 gallons estimated left in mudpit
- 7370 gallons introduced to well

Well Casing:

| | |
|------------------------------|------------------------------|
| 4in x 3ft SCD 40 PVC: | stock SS centralizers: |
| 4in x 5ft SCD 40 PVC: | custom SS centralizers: 1 |
| 4in x 10ft SCD 40 PVC: | 4"x2' SS locking riser: |
| 4in x 20ft SCD 40 PVC: | 4" SS locking cap: 1 |
| Total SCD 40 PVC pipe: ft | 4" SS female cap: 1 |
| 4in x 3ft SCD 5 SS pipe: | |
| 4in x 5ft SCD 5 SS pipe: | 4in x 5ft SCD 10 SS pipe: 1 |
| 4in x 10ft SCD 5 SS pipe: 2 | 4in x 10ft SCD 10 SS pipe: 1 |
| 4in x 20ft SCD 5 SS pipe: 20 | 4in x 20ft SCD 10 SS pipe: 5 |
| Total SCD 5 SS pipe: 420 ft | Total SCD 10 SS pipe: 115 ft |

Well Completion:

100# bags 16/40 sand: 3 bags
100# bags 10/20 sand: 12 bags
100# bags 8/14 sand: 15 bags
100# bags 8/20 sand: 11 bags

94# bags cement: 225 bags

5 gal. buckets bentonite: 3.5 buckets

50# bentonite powder: 22 bags

Surface Casing:

94# bags cement: 100 bags

50# bags bentonite powder: 10 bags

Pertinent Field Notes:

3/4/88 Spud well, drill 0'-108' pilot hole 8 7/8", ream 0'-40' 14 3/4" hole, water usage 925 gallons Cooper
3/5/88 Ream 40'-108', set 10"x100' steel surface casing, water usage 1175 gallons Cooper
3/6/88 Grout in 100' surface casing, 100 bags cement, 10 bags bentonite gel Cooper
3/7/88 Drill 100'-288' 9 7/8" hole, water usage 1200 gallons Cooper
3/8/88 Drill 288'-383' 9 7/8" hole, bedrock encountered 370'-375', bedrock is a flowband rhyolite, rig runs out of diesel with 250' drill pipe in hole, 1750 gallons drilling fluid used Cooper
3/9/88 Rig down for repairs, unable to get 240' drill pipe out of hole Cooper
3/10/88 Rig fixed and drill pipe out of hole, still has hydraulic leak on top-head seal, shut down drilling until fixed, water level taken 373.5', sounded bottom at 376', no water, probably 2.5' drilling fluid, 6' slough Cooper
3/16/88 Steam clean rig and drill pipe and re-setup on-site
3/17/88 Haul water to put on road, 9000 gallons dumped on road
3/18/88 Drill 383'-448' 9 7/8" hole, very slow drilling through rhyolite, drillograph broken at 430', repair at - 440', monitor filter placed on auxiliary canister for two hours (430'-448'), water usage 2600 gallons Cooper
3/19/88 Drill 448'-508' 9 7/8" hole, visible oil leakage past main air filter canister, main canistered monitor with monitor filter, visually checked filter canister and replaced air filter, still drilling rhyolite, water usage 2500 gallons Cooper

3/20/88 Blow hole to check for water, no water present, drill 508'-560', significant increase in drilling rate 528'-552', poor circulation and cutting returns, rounded grains in cuttings, water usage 1400 gallons, water pumped from mud pit 1400 gallons Cooper

3/21/88 Pump off 2800 gallons from mud pit, core 560'-570' with < 1% recovery, water level in open borehole 476.75', move rig off-site, water usage ~ 200 gallons Cooper

3/22/88 Southwest Surveys (D. Pearson) ran caliper, gamma, neutron, density, 16/40 resistivity and SP logs, bail, collect unofficial open borehole samples for Tracer and NASA, five VOA's collected from stainless steel bailer Cooper

3/23/88 Installed bottom bentonite pellet plug and 16/40 sand, installed 4"x545.54' stainless steel casing and 8/20 sand gravel pack in screen interval Cooper

3/24/88 Bail well eight times to set gravel pack, install upper bentonite pellet plug, stainless steel sounder weight, stainless cable 5'-10' and small amount of electric tape lost in hole above upper plug and were left in hole and covered with sand, grout well with 100 sacks cement and 10 sacks bentonite gel, grout not to surface, approximately 950 gallons water left in mud pit Cooper

3/29/88 Continue grouting, 65 sacks cement, six sacks gel Kaszuba

4/4/88 Continue grouting, 60 sacks cement, six sacks gel, set brass cap

4/6/88 Well development: bail 138 gallons, pump 948 gallons; total volume developed: 1086 gallons; well developed